try, respectively and to a lesser extent in non-AMI TO pts from 63% in the 1985-86 Registry to 81%, 77%, and 78% in Waves 1-3 of the Dynamic Registry, respectively (both P<0.0001). Inability to cross the lesion was the most common reason for failure in both pt groups. In multivariable analysis, the most consistent predictor of unsuccessful dilation of TO lesions was location in a bypass graft for both acute MI (OR 6.06, CI 2.67 – 13.77) and non-AMI pts (OR 4.08, CI 1.61 – 10.3). For non-AMI TO lesions, the presence of thrombus was associated with success (OR 0.33, CI 0.17-0.63) while being supplied by collaterals was not (OR 2.10, CI 1.20-3.68). Pt age, gender, smoking status did not predict failure.
Conclusions: In this investigation, TO lesions were attempted less frequently over time. Success rates for non-AMI pts were lower than AMI pts, were higher than in the prior decade but failed to increase above 80%. Increase in success rates could be related to more restricted patient selection. Factors related to lesion chronicity were associated with failure to dilate TO lesions in non-AMI pts.

1080-46 Inadequate Margins Remain a Major Source of Failure After Brachytherapy for Instent Restenosis: Analysis of 255 Lesions With One-Year Follow-Up

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Background: Intracoronary brachytherapy (ICBT) has previously been shown to be effective for instent restenosis. Causes of failure have not been widely studied since the technique gained approval.
Methods: All patients treated with ICBT for instent restenosis in native coronary arteries at our institution between March 2001 and March 2002 were followed for one year. ICBT was performed using the Novoste Beta-Cath System (Novoste Corporation) in 248 lesions and the Galileo System (Guidant Corporation) in 7 lesions. The procedures were performed by 29 cardiologists and 6 radiation oncologists in a busy tertiary care setting during the first year of approval. Patients with recurrent symptoms or abnormal stress tests underwent repeat angiography. A panel of two cardiologists and a radiation oncologist reviewed all angiograms obtained during follow-up and the corresponding baseline studies. The initial ICBT angiogram was assessed for adequacy of radiation margins with respect to the injured segment. The follow-up angiograms were assessed for presence of restenosis in the ICBT segment (TLRS).
Results: A total of 255 lesions were treated in 224 patients during the study period. There were 139 males (62%). Age of the patients was 66 ± 12 years. Reference vessel diameter, as assessed by the initial operator, was between 3 and 4 mm in 237 lesions (93%) and less than 3 mm in 18 lesions (7%). Follow-up angiography was performed in 127 of the treated lesions (50%). The mean duration between ICBT and follow-up angiography was 200 ± 84 days. TLRS was identified in 20 (7.8%) of the treated lesions. Nine of the 20 patients (45%) were found to have inadequate margins at the time of the initial ICBT procedure. The remaining 11 patients had documented radiation failure (4.3% of total treated patients).
Conclusion: Despite a large number of operators, with limited experience using a new device, failure of ICBT in adequately treated patients was uncommon. The major source of failure in our series was inadequate margins in the treated segment. Use of longer radiation sources and diligence in maintaining adequate margins should improve outcomes.

1080-63 The Real-World Clinical Practice of Intracoronary Radiation Therapy as Compared to Investigational Trials

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Background: Intracoronary radiation therapy (IRT) is established as an effective treatment for in-stent restenosis (ISR). We aimed to determine whether the 6-month clinical outcomes of patients (pts) treated with market released, post approval radiation are equivalent to those enrolled in the Washington Radiation for In-Stent restenosis Trials (WRIST).
Methods: The clinical outcomes of 110 pts with 128 lesions receiving commercially available IRT (beta 18.4 - 45.7 Gy or gamma 18 Gy) was compared with 117 pts with 117 lesions who received investigational IRT either with gamma (n=65, ^{192} Ir, 15Gy WRIST) or beta (n=52, ^{90}Y, 20.6 Gy Beta WRIST). The Investigational Radiation group (IR) received antiplatelet therapy for 1 mo and the Commercial Radiation group (CR) for 6 mo.
Results: The baseline characteristics were similar. Diabetes 41.7% in CR and 34.2% in IR. Pts in the CR were treated with wider radiation margins. Use of additional stents was similar (33.2% in CR vs 38.5% in IR, P=0.34) but atheroablation devices used in CR were lower than in IR (15.0% vs 72.6%, P<0.001). Major cardiac clinical events; Any MI, TLR, and TVR were significantly lower in the CR.
Conclusions: The “real world” clinical practice of IRT demonstrates lower events and better clinical outcomes when compared with patients treated during the investigational IRT trials. This is most likely a result of implementation of the lessons learned from the clinical trials primarily using higher doses, wider margins and prolonged antiplatelet therapy.

Table. Clinical Events at 6 Months

	Commercial IRT n (%)	Investigational IRT n (%)	P
Death	6/110 (5.5)	5/117 (4.3)	0.68
Any MI	3/110 (2.7)	16/117 (13.7)	0.003
Any Revascularization	20/124 (16.1)	40/117 (34.2)	0.001
TLR	11/128 (8.6)	27/117 (23.1)	0.002
TVR	15/128 (11.7)	35/117 (29.9)	<0.001
All MACE	15/110 (13.6)	36/117 (30.8)	0.002

1080-64 Late Total Occlusion Versus Treatment Failure Without Late Thrombotic Occlusion in Patients After Intracoronary Radiation: Angiographic and Clinical Outcomes

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Background: Treatment of in-stent restenosis (ISR) with intracoronary radiation therapy (IRT) has become the mainstay of revascularization therapy. However, radiation failure, which presents as either occlusion or restenosis, occurs in up to 25% of patients. Late thrombotic occlusion (LTO) is the major cause for radiation related morbidity. This study aimed to compare the outcomes of patients with LTO versus patients with renarrowing without LTO after intracoronary radiation.
Methods: Five hundred thirty-three patients who failed previous gamma or beta radiation presented with angiographic evidence of LTO (n=283) or renarrowing (n=248). Patients were followed for a mean of 423.8 ± 408.8 days after the date of failure and the clinical outcome was compared.
Results: Prevalence of prior MI and CABG was higher in patients with LTO (P=0.02, P=0.009; respectively). Other angiographical and clinical baseline characteristics were comparable between the two groups. Six- and 12-month clinical outcomes are displayed in the table. TVR-MACE rates after 6 and 12 months was higher in patients presenting with LTO versus patients without LTO (P=0.001, respectively); whereas death and Q-wave MI rates were similar in both groups.
Conclusions: Patients with LTO after intracoronary radiation therapy for ISR are at an increased risk for major cardiac events at 6 and 12 months. Prolonged antiplatelet therapy is mandatory to prevent LTO. These patients may require special care once presented with LTO.

Table. Six and 12-month clinical outcomes of LTO vs no-LTO

	Restenosis without LTO (n=283)	Restenosis with LTO (n=248)	P Value
Clinical outcome at 6 months			
TVR MACE, n (%)	58 (26.0)	80 (41.0)	0.001
TLR, n (%)	45 (20.2)	63 (32.6)	0.004
Clinical outcome at 12 months			
TVR MACE, n (%)	67 (36.4)	86 (54.1)	0.001
TLR, n (%)	51 (27.7)	66 (41.5)	0.008

1080-65 Factors Impacting Five-Year Survival After Percutaneous Coronary Intervention for Chronic Total Occlusion

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Background: It has been shown that survival improves following successful percutaneous coronary intervention (PCI) of chronic total occlusions (CTO). This study describes the clinical and demographic factors associated with decreased long-term survival in a large cohort of patients undergoing PCI of a CTO.
Methods: The Mid-America Heart Institute has maintained a registry of all coronary interventions. 2,687 PCIs for CTO were performed between June 1980 and May 2003. Clinical predictors of 5-year survival were examined to identify those variables that may assist the physician in weighing the risk:benefit ratio of revascularization. Univariate predictors of mortality were entered into a multivariable logistic regression analysis and are presented here.
Results: The highest odds ratio for death after PCI to a CTO was found in those with poor left ventricular systolic function (ejection fraction <40%). History of heart failure and chronic renal insufficiency were associated with greater than doubling of the mortality rate.
Conclusions: These data highlight the adverse effect of these demographic and clinical variables on outcomes after PCI upon CTO. This should not discourage the use of PCI, as it does relieve angina, and may improve long-term survival if successful. Rather, it